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<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/814,995
	Filing Date	March 31, 2004
	First Named Inventor	Nicholas D. Spencer
	Art Unit	1746
	Examiner Name	
Total Number of Pages in This Submission	Attorney Docket Number	ETH 111

ENCLOSURES (Check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance communication to Group
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
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<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Terminal Disclaimer	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Request for Refund	Two pages of Form PTO-1449 and copies of the thirteen references cited therein; Return Postcard
<input checked="" type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Certified Copy of Priority Document(s)	Remarks	
<input type="checkbox"/> Response to Missing Parts/ Incomplete Application		
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Rivka D. Monheit, Esq., Reg. No. 48,731 Pabst Patent Group LLP 400 Colony Square, Suite 1200, Atlanta, GA 30361
Signature	<i>Rivka D. Monheit</i>
Date	July 16, 2004

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.			
Typed or printed name	Ronna Berman		
Signature	<i>Ronna Berman</i>	Date	July 19, 2004

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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# FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ ) 0.00

## Complete if Known

Application Number	10/814,995
Filing Date	March 31, 2004
First Named Inventor	Nicholas D. Spencer
Examiner Name	
Art Unit	1746
Attorney Docket No.	ETH 111

## METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

Deposit  
Account  
Number  
Deposit  
Account  
Name

50-3129

Pabst Patent Group LLP

The Director is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☒ Credit any overpayments

☒ Charge any additional fee(s) or any underpayment of fee(s)

☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

## FEE CALCULATION

### 1. BASIC FILING FEE

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					(\$ ) 0.00

### 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims		Extra Claims		Fee from below		Fee Paid
19	-20*	0	x	9.00	=	0.00
4	-4**	0	x	43.00	=	0.00
0					=	0.00

Large Entity		Small Entity		Fee Description
Fee Code	Fee (\$)	Fee Code	Fee (\$)	
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$ ) 0.00

\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

### 3. ADDITIONAL FEES

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for <i>ex parte</i> reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ ) 0.00

## SUBMITTED BY

Name (Print/Type)	Rivka D. Monheit	Registration No. (Attorney/Agent)	48,731	Telephone	(404) 879-2152
Signature	<i>Rivka D. Monheit</i>	Date	July 16, 2004		



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Nicholas D. Spencer, Sara Maria Morgenthaler, and Seunghwan Lee

Serial No.: 10/814,995

Group Art Unit: 1746

Filed: March 31, 2004

Examiner:

For: *CONTROLLED SURFACE CHEMICAL GRADIENTS*

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

Sir:

Pursuant to 37 C.F.R. §1.56 and 37 C.F.R. §1.97, Applicants submit an Information Disclosure Statement, including two (2) pages of Form PTO-1449 and a copy of each document cited therein.

This Information Disclosure Statement is being filed under 37 C.F.R. § 1.97(b) prior to a first Office Action on the merits. It is believed that no fee is required with this submission. However, should a fee be required, the Commissioner is hereby authorized to charge any required fees to Deposit Account No. 50-3129.

**Publications**

BAIN, et al., "Formation of two-component surfaces by the spontaneous assembly of monolayers on gold from solutions containing mixtures of organic thiols" *J. Am. Chem. Soc.*, 110, 6560-6561 (1988)

BAIN, et al., "Formation of monolayer films by the spontaneous assembly of organic thiols from solution onto gold" *J. Am. Chem. Soc.*, 111, 321-335 (1989)

DERTINGER, et al., "Generation of gradients having complex shapes using microfluidic networks" *Anal. Chem.*, 73, 1240-1246 (2001)

FUIERER, et al., "Patterning mesoscale gradient structures with self-assembled monolayers and scanning tunneling microscopy based replacement lithography" *Adv.Mater.*, 14, 154-157 (2002)

HERBERT, et al., "Micropatterning gradients and controlling surface densities of photoactivatable biomolecules on self-assembled monolayers of oligo(ethylene glycol) alkanethiolates" *Chem. Biol.*, 4, 731-737 (1997)

JEON, et al., "Generation of solution and surface gradients using microfluidic systems" *Langmuir*, 16, 8311-8316 (2000)

LAIBINIS, et al., "Attenuation of photoelectrons in monolayers of *n*-alkanethiols adsorbed on copper, silver, and gold" *J. Phys. Chem.*, 95, 7017-7021 (1991)

LIEDBERG, et al., "Molecular gradients of  $\omega$ -substituted alkanethiols on gold: preparation and characterization" *Langmuir*, 11, 3821-3827 (1995)

LIEDBERG, et al., "Molecular gradients of  $\omega$ -substituted alkanethiols on gold studied by x-ray photoelectron spectroscopy" *Langmuir*, 13, 5329-5334 (1997)

RUARDY, et al., "Preparation and characterization of chemical gradient surfaces and their application for the study of cellular interaction phenomena" *Surf. Sci. Rep.*, 29, 3-30 (1997)

SEHAYEK, et al., "Preparation of graded materials by laterally controlled template synthesis" *J. Am. Chem. Soc.*, 125, 4718-4719 (2003)

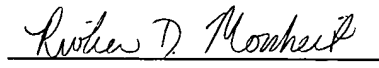
TERRILL, et al., "Dynamic monolayer gradients: active spatiotemporal control of alkanethiol coatings on thin gold films" *J. Am Chem. Soc.*, 122, 988-989 (2000)

WU, et al., "Formation and properties of anchored polymers with a gradual variation of grafting densities on flat substrates" *Macromolecules*, 36, 2448-2453 (2003)

### Remarks

This statement should not be interpreted as a representation that an exhaustive search has been conducted or that no better art exists. Moreover, Applicants invite the Examiner to make an independent evaluation of the cited art to determine its relevance to the subject matter of the present application. Applicants are of the opinion that their claims patentably distinguish over the art referred to herein, either alone or in combination.

Respectfully submitted,

  
Rivka D. Monheit  
Reg. No. 48,731

Dated: July 16, 2004

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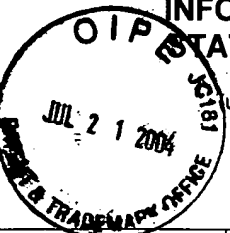
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Substitute for form 1449A/PTO		Complete if Known	
 <p>Use as many sheets as necessary)</p>		Application Number	10/814,995
		Filing Date	March 31, 2004
		First Named Inventor	Nicholas D. Spencer
		Group Art Unit	1746
		Examiner Name	
Sheet 1 of 2	Attorney Docket Number	ETH 111	

OTHER ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner's Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
		BAIN, et al., "Formation of two-component surfaces by the spontaneous assembly of monolayers on gold from solutions containing mixtures of organic thiols" <i>J. Am. Chem. Soc.</i> , 110, 6560-6561 (1988)	
		BAIN, et al., "Formation of monolayer films by the spontaneous assembly of organic thiols from solution onto gold" <i>J. Am. Chem. Soc.</i> , 111, 321-335 (1989)	
		DERTINGER, et al., "Generation of gradients having complex shapes using microfluidic networks" <i>Anal. Chem.</i> , 73, 1240-1246 (2001)	
		FUIERER, et al., "Patterning mesoscale gradient structures with self-assembled monolayers and scanning tunneling microscopy based replacement lithography" <i>Adv. Mater.</i> , 14, 154-157 (2002)	
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		JEON, et al., "Generation of solution and surface gradients using microfluidic systems" <i>Langmuir</i> , 16, 8311-8316 (2000)	
		LAIBINIS, et al., "Attenuation of photoelectrons in monolayers of <i>n</i> -alkanethiols adsorbed on copper, silver, and gold" <i>J. Phys. Chem.</i> , 95, 7017-7021 (1991)	
		LIEDBERG, et al., "Molecular gradients of $\omega$ -substituted alkanethiols on gold: preparation and characterization" <i>Langmuir</i> , 11, 3821-3827 (1995)	
		LIEDBERG, et al., "Molecular gradients of $\omega$ -substituted alkanethiols on gold studied by x-ray photoelectron spectroscopy" <i>Langmuir</i> , 13, 5329-5334 (1997)	
		RUARDY, et al., "Preparation and characterization of chemical gradient surfaces and their application for the study of cellular interaction phenomena" <i>Surf. Sci. Rep.</i> , 29, 3-30 (1997)	
		SEHAYEK, et al., "Preparation of graded materials by laterally controlled template synthesis" <i>J. Am. Chem. Soc.</i> , 125, 4718-4719 (2003)	

Examiner's Signature	Date Considered
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application.

<sup>1</sup> Unique citation designation number <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant to place a check mark here if English language Translation is attached.

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<b>Substitute for form 1449A/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	
				10/814,995	
				Filing Date	
				March 31, 2004	
				First Named Inventor	
Nicholas D. Spencer					
Group Art Unit					
1746					
Examiner Name					
Attorney Docket Number					
ETH 111					

Sheet	2	of	2
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OTHER ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner's Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
		TERRILL, et al., "Dynamic monolayer gradients: active spatiotemporal control of alkanethiol coatings on thin gold films" <i>J. Am Chem. Soc.</i> , 122, 988-989 (2000)	
		WU, et al., "Formation and properties of anchored polymers with a gradual variation of grafting densities on flat substrates" <i>Macromolecules</i> , 36, 2448-2453 (2003)	

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<sup>1</sup> Unique citation designation number <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant to place a check mark here if English language Translation is attached.

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